

1. The reply brief filed 05/30/2008 has been entered and considered. The application has been forwarded to the Board of Patent Appeals and Interferences for decision on the appeal.
2. Responsive to Reply Brief on 05/30/2008, a supplemental Examiner's Answer is set forth below:

Applicants' Arguments:

- A. Examiner admits that Kim does not disclose at least one limitation of the presently claimed subject matter (i.e., "a group of interdigitated electrodes ..."; see Claim 1, line 4; see also pages 2-3 of the March 30, 2006 Office Action) but alleges that this feature is inherent to liquid crystal cells having an in-plane switching mode.
- B. The Examiner again cites to Held (U.S. 6,177,972) and Broer (U.S. 7,123,319) as support for the erroneous contention that all liquid crystal cells having an in-plane switching mode inherently have interdigitated electrodes.

The Examiner acknowledges on page 6 of the Supplemental Examiner's Answer that Broer has a PCT filing date of December 10, 2001 whereas the present application has a PCT filing date of July 9, 2001. 35 U.S.C. § 363 makes it clear that the international filing date is the filing date of the corresponding national application in the USPTO. The Examiner provides no basis for concluding that Broer is prior art to the

present application. Appellants submit that the arguments made in view of Broer are not relevant to the presently-claimed invention.

Perhaps the Examiner is citing Held for the evidentiary purpose of showing that interdigitated electrodes may have a certain structure ("with fingers of folded hands"), however, the structure of interdigitated electrodes is not at issue in the present appeal. At issue is whether all liquid crystal cells having an in-plane switching mode inherently have interdigitated electrodes. Held, on its own, does not support the Examiner's contentions in this regard.

C. In section B on page 6 of the Supplemental Examiner's Answer, the Examiner attempts to distinguish Clark, Patel and Jaegemalm on the basis that these publications are not cited in the rejection. It does not matter whether the publications are cited in the rejection. What is important is that these publications demonstrate that liquid crystal cells having an in-plane switching mode without interdigitated electrodes are known and thus the Examiner's assertion of inherency is not correct.

D. With respect to section C of the Supplemental Examiner's Answer, the Examiner appears to do nothing more than restate the Examiner's position that Kim discloses a pre-tilt angle that is substantially 0° . It appears that the Examiner fails to give full consideration to the arguments of the first Reply Brief beginning on page 5, line 17

through page 6, line 12 where Appellants provided evidence that the drawings of Kim do not in fact disclose a pre-tilt angle of substantially 0°.

Kim does not disclose this feature of the claimed invention because Kim discloses that the multi-domain liquid crystal cells of Kim comprise different pre-tilt angles per domain. Formation of a multi-domain structure having different pre-tilt angles per domain is essential for Kim in order to achieve a wide viewing angle which is the object of the invention discloses in Kim.

Responses:

A. Examiner did not admit that Kim does not disclose at least one limitation of the presently claimed subject matter (i.e., "a group of interdigitated electrodes ...").

Examiner alleges that a group of interdigitated electrodes is structurally inherent to in-plane switching electrodes.

B. The PCT of the instant application published in Japanese language, the filing date on July 9, 2001 of this PCT is not an effective filing date. However, Broer et al. (US7123319) having English PCT filed on Dec 10, 2001, which is an effective filing date.

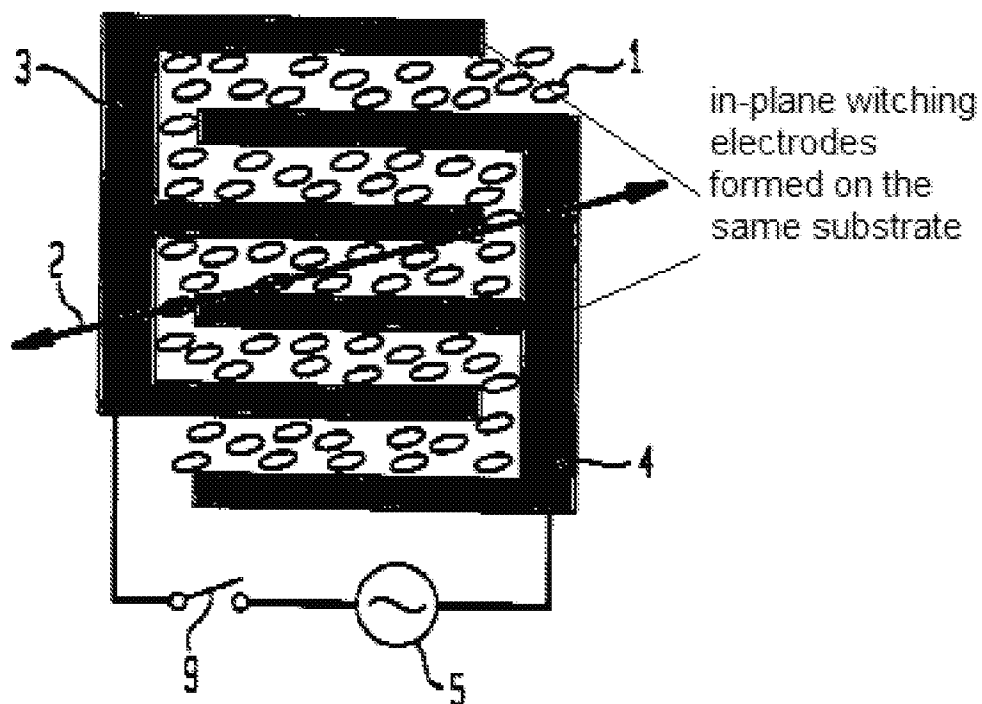
Examiner mentioned that the in-plane switching electrodes have inherently same structure with interdigitated electrodes and form on the same substrate. The in-

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plane switching electrodes and interdigitated electrodes also have the same structure of electric field when voltage applied onto them.

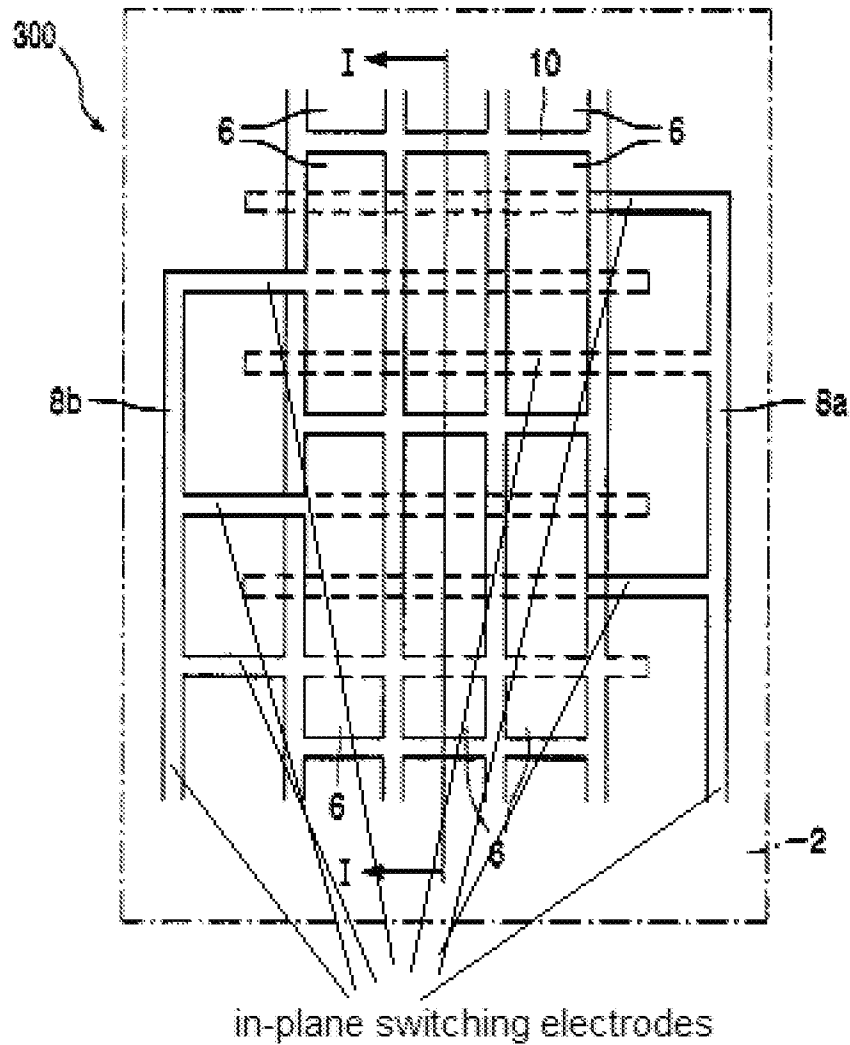
Again here is repeat to demonstrate an in-plane switching (IPS) electrodes having an inherent structure of interdigitated electrodes with comb-shape, examiner has further illustrated with the demonstrate references: Held et al. (US6177972) and Broer et al. (US7123319) in Final Action mailed on 10/20/2006 and in last Reply Brief filed on 4/1/2008.

The demonstrated reference Held et al. (US6177972): IPS electrodes:

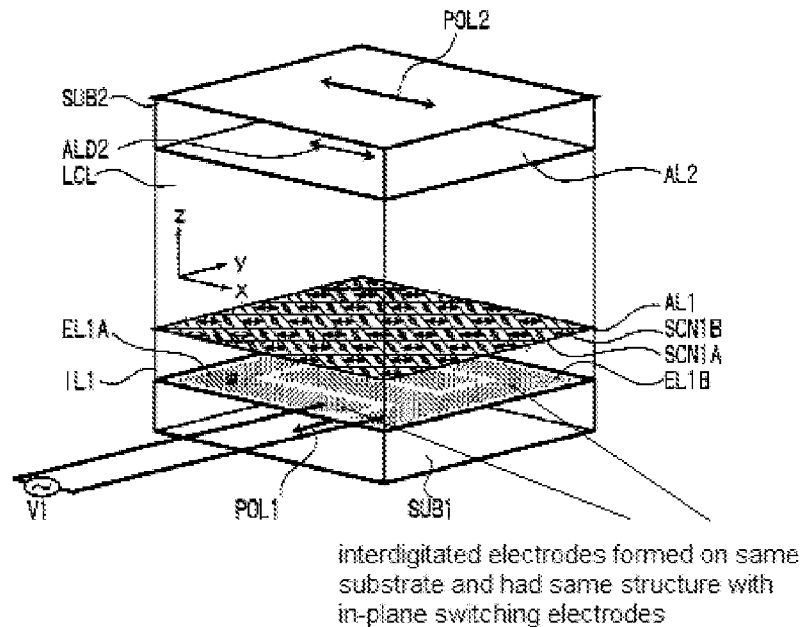


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The demonstrated reference Broer et al. (US7123319): IPS electrodes:



The instant application: Interdigitated electrodes (with fingers of folded hands, see examiner's answer, page 10-11):



Therefore, an In-Plane Switching electrodes inherently same STRUCTURE with a group of interdigitated electrodes" is totally supported. Applicants failed to demonstrate clearly that In-Plane Switching electrodes and group of interdigitated electrodes have different STRUCTURE.

C. References Clark, Patel and Jaegemalm provided by applicants did not show clearly STRUCTURE of In-Plane Switching electrodes.

D. Kim disclose (Fig. 4) the pre-tilt angle of each liquid crystal anchoring direction (col. 5 line 53-55) with respect to a corresponding substrate surface is substantially zero

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degrees when photo-energy of ultraviolet light at 6000 mJ/cm (col. 5 lines 30-32). Kim discloses (col. 5 lines 21-32):

In that time, the pretilt angle formed on the alignment layer 9 can be controlled by photo-energy. When ultraviolet light is perpendicularly irradiated into the substrate 2 coated with alignment layer 9 of polysiloxane based materials, the pretilt angle of the alignment layer 9 surface is controlled in a broad range according to the photo-energy of the ultraviolet light, as shown in FIG. 4. Referring to this figure, the pretilt angle can be controlled depending upon the photo-energy irradiated into the alignment layer 9 (the wavelength of ultraviolet light is 350 nm). The pretilt angle exponentially decreases according to the photo-energy of ultraviolet light to at almost 0 degree at 6,000 mJ/cm.

The pretilt angle is almost 0 degree is possible with the photo energy of 6000mJ/cm.

Figures 10a-b and 14a-j (as examples) show that the alignment layer has been subjected to liquid crystal anchoring treatments in plural directions to form a plurality of liquid crystal in-plane anchoring directions. The plural directions in the alignment layer give the multi-domains with pretitl angle of 0 degree when the applied photo energy is 6000mJ/cm.

Appellant may file another reply brief in compliance with 37 CFR 41.41 within two months of the date of mailing of this 'supplemental examiner's answer. Extensions of time under 37 CFR 1.136(a) are not applicable to this two month time period. See 37 CFR 41.43(b)-(c).

/David Nelms/

Supervisory Patent Examiner, Art Unit 2871